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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,643	11/29/2001	Keiji Inoue	36856.585	8176

7590 09/12/2002
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EXAMINER

DINH, TUAN T

ART UNIT PAPER NUMBER

2827

DATE MAILED: 09/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,643

Applicant(s)

INOUE ET AL.

Examiner

Tuan T Dinh

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. Figure 12 should be designated by a legend such as **--Prior Art--** because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-14, and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, lines 15-17 and claim 10, lines 18-20, it is confuse. The phrase of "a plurality of rows... are arranged to be sequentially offset from one another from inside of a region" is not understood.

Regarding claim 1, lines 15-19 and claim 10, lines 18-22, it is unclear. The phrase of "a plurality of rows...are mounted toward outside thereof" is not understood. Does applicant meant "a plurality of rows having inner and outer rows?"

Regarding claim 1, lines 19-22 and claim 10, lines 22-27, it is unclear. The phrase of "said connecting terminals...connected to said connecting terminals of a lower module substrate..." is not understood. Does applicant meant "said connecting terminals of an upper module substrate are electrically connected to an outer row of said connecting pads?" and also, does applicant meant "said connecting terminals of a lower module substrate are electrically connected to an inner row of said connecting pads?"

Regarding claim 5, lines 16-17, it is unclear. The phrase of "said connecting pads to be electrically connected to said connecting terminals" is not positive claim and not understood.

Regarding claims 6 and 11, it is unclear. What does applicant meant of "a lower substrate...exposed as result of said upper module substrate being arranged in an offset manner?"

Regarding claims 3, 8, 13, and 17, it is unclear. Does applicant meant of "total length to total width of said module substrates" or "a length to a width of each of module substrate?"

4. Claim 1 recites the limitation "said connecting members" in lines 23-24. There is insufficient antecedent basis for this limitation in the claim.
5. Claim 5 recites the limitation "said connecting members" in line 18. There is insufficient antecedent basis for this limitation in the claim.
6. Claim 10 recites the limitation "said connecting members" in lines 26-27. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

8. Claims 1, 3, 5-6, 8, 10-11, 13, 15, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kledzik et al. (U. S. Patent 6,313,998).

As best understood to claims 1, 5-6, 10-11, Kledzik discloses a module substrate mounting structure as shown in figures 1-10 comprising:

a motherboard (PCB 101, column 4, line 22) having connecting pads (102, column 4, lines 23-24) disposed on a surface thereof; and

a plurality of module substrates (104L, 104U, 105, column 4, lines 35-37) each having connecting terminals (109, 107L, 107U, column 4, lines 47 and 56-57) disposed on a surface thereof; wherein

said module substrates (104L, 104U, 105) are stacked with a space therebetween on said motherboard (see figure 1), said connecting terminals (107L, 107U, 109) of said module substrates (104U, 104L, 105) are electrically (the leads of

the substrates (104, 105) contact to the pads on the PCB 101) connected to said connecting pads (pad array 102 having pad 103) on said motherboard (101), a plurality of said connecting terminals are arranged along an edge portion of each of said module substrates, said module substrates are stacked with said connecting terminals aligned with each other, a plurality of said connecting pads having inner and outer pads (pad 103 having inner and outer pads 103A and 103B) are arranged on the surface of said motherboard in the direction of arrangement of said connecting terminals, said connecting terminals (110) of an upper module substrate (105) of said module substrates are electrically connected to an outer row of connecting pads (103B), said connecting terminals of a lower module substrate of said module substrates are electrically connected to an inner row of said connecting pads.

As best understood to claims 3, 8, 13, and 17, Kledzik discloses the structure as shown in figures 1-10 wherein a ratio of a length to a width of each of said module substrates is within a range of about 1/3 to about 1/1.

As to claims 4 9, 14, and 18, Kledzik discloses the structure as shown in figures 1-10 wherein said module substrates capable of being a converter power-supply circuit.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 2, 7, 12, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kledzik et al. (U. S. Patent 6,313,998) in view of Mandai et al. (U. S. Patent 5,726,612).

Kledzik does not show the module substrates have a nozzle suction area that is arranged to be drawn by a component transporting suction nozzle.

Manai teach a nozzle suction (3) formed electronic components on a substrate (1) disclosed in figure 1.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a nozzle suction as taught by Mandai to employ the structure of Kledzik in order to provide an engaging of components mounted on PCB and also prevent ESD of components when mounted on PCB.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. McIver, Wu et al., Gulachenski et al., and Fogal et al. Disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T Dinh whose telephone number is 703-306-5856. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-1341 for regular communications and 703-305-1341 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

TD
September 9, 2002

Albert W. Paladini 9-9-02
ALBERT W. PALADINI
PRIMARY EXAMINER